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A MANUAL



for

BLIND

GARDENERS

HV 1765
F624

REVISED EDITION 1978



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A MANUAL FOR BLIND GARDENERS

AMENDMENTS 1979

Appendix 11

List of Scented Plants. Applications for this List should not be made to the Royal Horticultural Society's Gardens at Wisley but should be sent to:-

The Southern and Western Regional Association
for the Blind,
32 Old Queen Street,
London SW1H 9HP.

Aid for digging, forking and raking

Instructions for using this aid are given on pages 21 and 22 of the Manual and a description of its construction on page 15 (at the end of the section entitled 'How to Make the L-Shapes').

In the latter description it is stated that square metal tubing for making the joints is difficult to obtain. This difficulty no longer exists and the joints are readily available, cut to six-inch lengths and drilled with screw holes. They are despatched in pairs, the only cost being for packing and postage. This is 60p First Class letter post for one pair, and £1.20 parcel post for two to four pairs.

Remittance with order to:-

Engineering Training Department,
Queen Alexandra College,
49 Court Oak Road,
Harborne,
Birmingham.

Note: Orders cannot be dealt with outside normal term time.

Aid for indoor seed sowing

The aid illustrated on page 25 has now been improved. There is still an upright rectangular surround for a seed tray, but the five green sticks fitted from end to end are no longer used. In their place is a notched bar, which is movable and slots into notches down the two long sides of the surround. There are eight of these notches each side, providing eight progressive positions for the bar. The bar has five notches, so in all forty places are set for the space sowing of seed or the insertion of cuttings. This aid is easier to construct and easier to use than the one with five green sticks shown in the Manual.

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A MANUAL FOR BLIND GARDENERS

Some Suggested Aids

REVISED EDITION July 1978.

by Kathleen Fleet

Information Officer for
The Advisory Committee for Blind Gardeners

Sincere appreciation is recorded to all the blind gardeners who have contributed practical ideas over many years for the benefit of fellow gardeners with the same handicap. Each of these ideas has influenced an overall concept of gardening methods useful to blind people. The list of all the contributors is too long to quote, but the name of William Fern must have special mention, as it was he who in 1968 thought out the idea of using a right-angle with extensions as a multi-purpose gardening aid. The right-angle is now recommended as basic equipment for blind gardeners.

The writer also acknowledges with gratitude the gardening advice given by the Principal and staff of Norwood Hall Horticultural Institute, and she expresses sincere thanks to the Royal National Institute for the Blind for the publication of both editions of this Manual.

HV 1765
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C O N T E N T S

	PAGE
FOREWORD	
Introduction	1
The Garden Plan	3
Weeding	10
Advice to Beginners	11
Tools and other equipment	12
How to make the L-Shapes	13
Can I mow the Lawn?	16
Can I keep lawn Edges Tidy?	18
Lawn Care	19
Digging, Forking and Raking	21
Indoor Seed Sowing	23
Seed Sowing out of Doors	27
Pruning	29
The problem of Spraying	34
Appendix I Potting Up and Potting On	36
Appendix II Miscellaneous Information	37

F O R E W O R D

I have great pleasure in writing a few words of Introduction to this booklet. Most gardeners are keen to pass on their knowledge and experience to others, but few perhaps realise the need for such information to be adapted for practical use by blind or partially sighted people.

Miss Kathleen Fleet has for many years recognised this need and has been tireless in her efforts in this field. This booklet is a revision of her earlier work, with which I have been privileged to be associated. Those of us in any way involved in the teaching of gardening to blind people know just how enthusiastic they are, and the contents of this book will reveal something of this to all who read it.

K. J. SPACKMAN
Principal
Norwood Hall Institute of Horticultural Education

I N T R O D U C T I O N

THE PURPOSE OF OUR MANUAL

There are many and varied sources from which the principles of good gardening can be learned, so our Manual is not designed to deal with gardening information in general. Its sole purpose is to describe individual methods and practical, home-made aids devised by blind people to overcome particular gardening difficulties due to visual handicap.

Nearly all the ideas have originated from experiences of totally blind gardeners, so in this Manual special regard is paid to the needs of people who are entirely without sight. Unfortunately there still exists a certain amount of scepticism about totally blind people being able to do gardening successfully, but on the other hand there is evidence that among visually handicapped gardeners a surprisingly high number have no sight at all.

The ability shown by these gardeners can encourage others with a total visual handicap to take up the challenge and start cultivating at least some part of the garden. It can also prove that loss of sight need not entirely close the door to all gardening activity. In our Manual ideas will be found which illustrate how difficulties can be surmounted, how self-reliance can be practised and how wide can be the range of achievement.

ADAPTABLE IDEAS

While describing suggested methods for totally blind gardeners it is important not to overlook or minimise the particular needs of those who have some degree of residual vision. Sight varies so much from one person to another that individual problems are equally varied, so the simplest plan for our Manual is to describe methods to cater for a complete visual handicap and allow scope for adaptations.

It is likely that many of the ideas described can be of practical value to all visually handicapped gardeners and can be accepted without alteration. However, all the methods suggested are flexible and can be adapted according to individual needs. In some cases, also, it may be found that the suggestion will form a basis on which to build and develop further ideas for personal or special requirements.

(Note should be made, therefore, that our booklet includes all who have a visual handicap).

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WHO ARE THE GARDENERS?

Blind and sighted people alike do gardening for one of three reasons. Either:-

- (a) They have a natural love for cultivating plants,
- (b) They want to grow plants for food, or
- (c) They must of necessity keep the garden tidy.

Can all these people be called gardeners? Perhaps, strictly speaking, only those who love cultivating plants are truly gardeners at heart, but all have to exert effort and can benefit from help and advice. For the sake of simplicity therefore, why not call everyone who cultivates plants a gardener?

For blind people this overall view of gardening is of special advantage, because it is then possible to include everyone who makes effort, from the allotment holder to the flat dweller with nothing more extensive than a balcony or small patio. It is important that no one should miss opportunities for developing an interest. Apart from the fact that some people are restricted by environment, there are others who have to cope with the limitations of more than one disability, which means that a wide-ranging view of gardening is essential.

BASIS IDEAS IN OUR MANUAL

No gardeners will need to follow all the suggestions in this booklet, nor even accept them all as the only means of attaining self-reliance in the garden. Nevertheless, it must be said that all the methods and aids described are based on the principles of good gardening, and many are adaptations of methods used by sighted gardeners. All have been given a great deal of thoughtful preparation, with research into the availability and cost of materials. Simplicity of construction and details of operation have also been taken into account, both being of vital importance where aids will be used by people of varying skills.

It is hoped that our Manual will be helpful to all concerned, and that it may stimulate a measure of self-reliance, which can so often be one of the keys to a normal place in the general community.

THE GARDEN PLAN

The plan of a garden to be worked by a blind person cannot be dictated, as it is always an individual matter. However, there are a few points which are worth general consideration, such as:-

PATHS

As a rule it is best to avoid having paths which curve, because they can lead to orientation difficulties. Straight paths are easier to negotiate, although it should not be assumed that a continuous straight path from end to end of the garden is a necessary part of the plan. The direction of the path could be changed at different points and the changes suitably marked.

LANDMARKS

1. Where a path changes direction the place can be marked by a shrub, a small tree or some other garden feature. Alternatively, the texture of the path can be changed - and there are choices between crazy paving, slabs, concrete, gravel or grass.
2. If there must be steps anywhere in the garden, a rail should be erected. This should begin several feet along the approaching path, especially before a downward flight. These common-sense precautions are sometimes overlooked.
3. For some people landmarks can be helpful along the boundary of a large lawn.



FLOWER BORDERS AND BEDS

Width. Borders should be narrow (say, two to three feet across). All plants will then be within easy reach of the blind gardener, who depends on touch and has to work on his knees, using short-handled tools.

Edges. Some blind gardeners like to edge borders and beds with a low kerb, while others prefer a natural boundary. All agree that plants should not be set too close to the edge, where they would run the risk of damage. In favour of a kerb it must be said that it can provide a guiding mark and also help to prevent soil spilling over the path.

Straight edging. Whatever the view about kerbs, there is no doubt at all that edges need to be kept straight. This will ensure that there is always an accurate guideline for measuring out the position of plants. A hard path of slabs or concrete is therefore quite a good idea - and it has the added advantage of being dry for the gardener working on his knees.

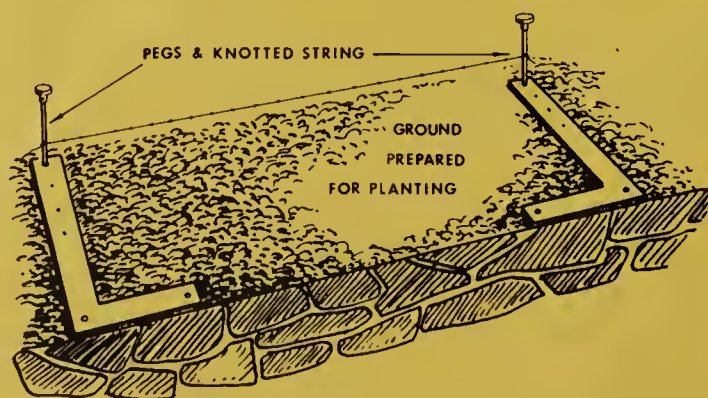
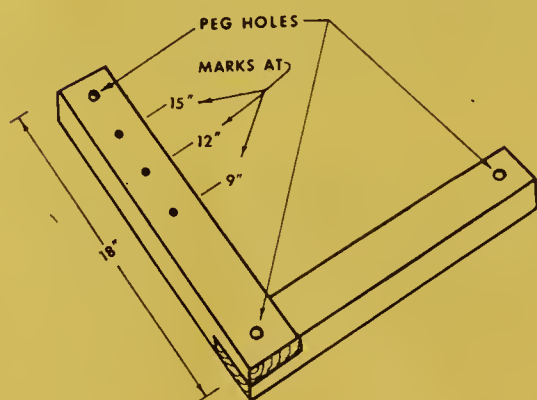
Plan of flower beds. Island beds need not, of course, be as narrow as borders. The most suitable shape is rectangular and the gardener must be able to reach at arm's length to the middle of the bed from either side. In a rose bed stepping stones through the middle can be useful, as they facilitate pruning, cutting the flowers and giving the bushes general attention.

Easy location of plants. Some blind gardeners make a separate bed for each kind of plant - for example, dahlias in one bed, annuals in another, and so on. This formal style is a matter of choice, as there are alternatives, for example, plants arranged in groups of three or five are easy to locate and will give scope for greater variety.

Plants in the beds. Here, too, the plants can either be set out formally in straight rows or arranged in groups. The formal pattern would be a row of the tallest plants in the middle of the bed, flanked by rows of the smaller ones. This pattern is not difficult to work out.

Any arrangement of plants in groups, however, does involve a good deal of preparatory planning, but this fact need not be a deterrent, as there are measuring aids to overcome any practical problems.

L-Shaped Measuring Aid A simple, home-made aid for measuring planting distances in borders and flower beds is shaped like a printed capital letter L. It can be used both for straight lines and for planting in groups. Two of these L-shapes should be made, then they can be used as a pair, with a connecting line or stick between them.

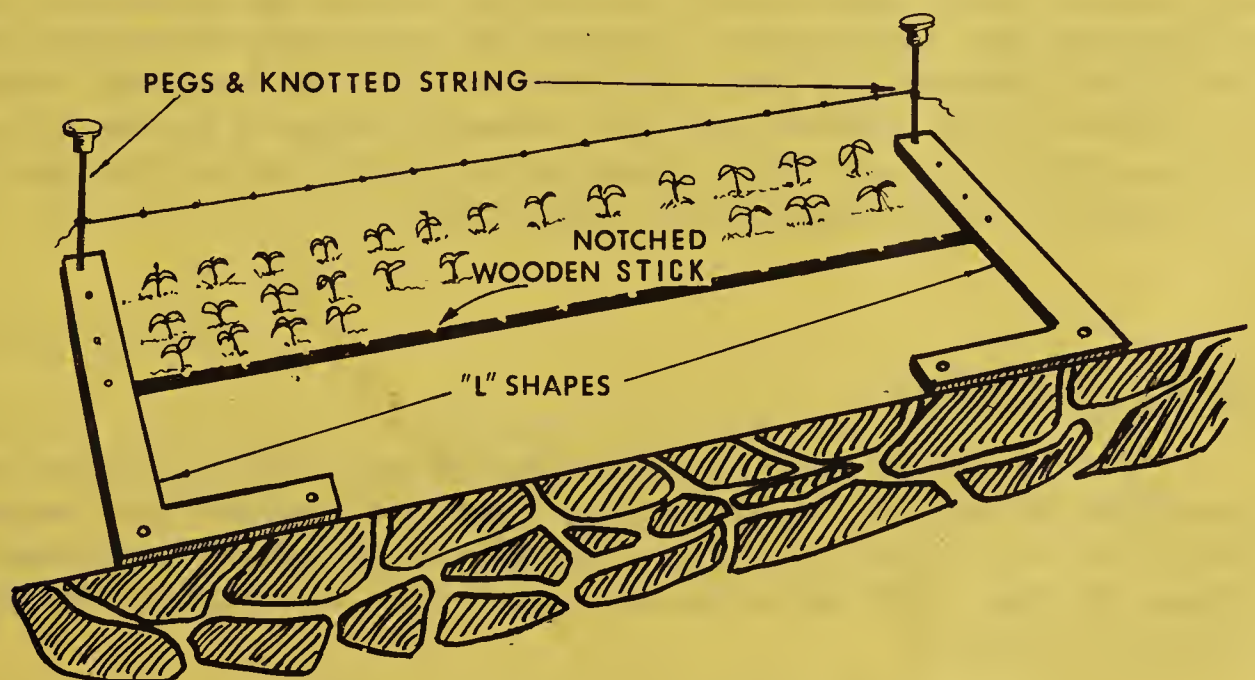


HOW TO USE THE L-SHAPES

First of all it is essential that the edges of borders and beds are perfectly straight. The rectangular shape of beds must also be accurate (in this respect the kerbs already mentioned are an advantage). The short arms of the L-shapes are placed flat on the ground and flush with the front straight edge, while the long arms point into the border or bed to give planting distances from front to back.

The ground space between the two L-shapes can be any desired length. Taking a five-foot long flower bed as an example, one of the two L-shapes would be pegged at one end of the five feet, and the other at the opposite end. The short arms of the two shapes would be flush with the straight five-foot edge of the bed, with the arm of the left-hand shape pointing to the right (exactly like a printed capital L) and the arm of the right-hand shape pointing to the left (like the letter L printed backwards). They are then ready in position for a connecting line or stick to be run along the ground between the two long arms.

The long arms should measure eighteen inches and should be marked with studs, notches or bands at 9", 12" and 15". The connecting line or stick can then run between any of these given marks for planting distances from front to back. If the gardener wishes, the line can be knotted (or the stick notched) at suitable intervals for planting distances from left to right. Three-inch intervals are useful, as they will serve for the spacing of plants at either six or nine inches.



It is recommended that the L-shapes are made of wood, as they can then be used in a variety of gardening operations on the lawn and the vegetable plot, and as an aid for digging and raking. Further descriptions will be given in the sections dealing with these operations, together with full construction details.

MAKING THE SHAPES WITH PLASTIC MATERIAL

If desired, the L-shapes could be made with one-inch plastic piping, cut to the required lengths and joined at the corners with angle pieces. Constructed from this material, however, they could only be used for work in borders and flower beds.

As already mentioned, shapes made from wood are useful for many different purposes, but the multi-purpose value of plastic piping would be more limited. It would not be suitable, for instance, as an aid on the vegetable plot, where there would be the risk of cutting it with a spade or crushing it with the foot. All the same, it should be adequate for use in the flower garden, where the work is lighter.

If plastic piping is the material chosen for use, the measurement marks would need to be made with studs rather than notches. This would be no problem, as the plastic responds easily to self-tapping screws.

SCENT IN THE FLOWER GARDEN

Everyone enjoys fragrance in the garden, but it is a mistake to confine it to one area. To gain the fullest pleasure from scent it should be distributed:-

- (a) in different parts of the garden, and
- (b) throughout the year.

If scented plants and flowers are distributed in various parts of the garden their individual fragrance can be appreciated, and for the blind gardener they can be a means of locating particular areas. Scent well spaced can even lighten the task of weeding! What better incentive to the job of taking out weeds along a border than clearing a stretch at a time, first from the lavender to the stocks, then from the stocks to the mignonette, and so on?

TOUCH SATISFACTION

Although the sighted gardener will group plants and flowers according to colour, he will also take the texture and shape of leaves into consideration. Similarly, the blind gardener can group colours, either by the light of previous experience or through the advice of sighted friends.

No help is needed, however, in selecting plants for certain places because of their leaf texture and shape. There is so much variety in foliage, from firm glossy leaves to dainty feathery ones, that attractive grouping is not difficult. A little planning can give added pleasure to the handling of plants and also make a display pleasing to the eye of sighted friends.

EXAMPLES OF CONTRASTING SHAPE AND TEXTURE

Here are just a few examples of bedding plants with contrasting shape and texture, one or two with scent being introduced at intervals. Similar contrasts are, of course, found everywhere in the garden and our little list is nothing more than a random illustration.

12" apart

Godetia
Nigella (love-in-a-mist)
Sweet sultan
Clary
Heliotrope
Salvia
Calendula (marigold)

9" apart

Candytuft
Night-scented stock
Eschscholtzia
Fibrous-rooted begonia (with
red leaves for colour effect)

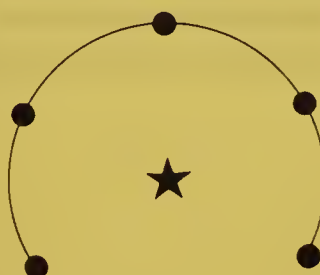
PLANTING FOR DISPLAY

Some gardeners may like to work out a simple design with plants, and perhaps will think of using sticks and string as aids. This method could be 'fiddley' as string so easily tangles, so why not use curtain spring-wire? Short lengths of this, with eyelets screwed in at both ends of each length, would make a firm, flexible aid that would last indefinitely.

The spring-wire referred to is the type used for hanging net curtains. For this purpose it is stretched until taut, but as a garden aid for design it would be laid on the ground to measure out shapes for plant positions and would not be stretched. Pegs to run through the eyelets and hold the wires temporarily in place could be made from skewers. The sharp points of the skewers would need to be filed to make them safe for use and a cork run up to the ring end of the skewer would make that end easier to hold.

ILLUSTRATION OF DESIGN

Various shapes can be designed, but the simplest one to illustrate consists of five spokes spread out like a fan. A plant at the point of each will form a semi-circle and a different plant can then be put in the middle.



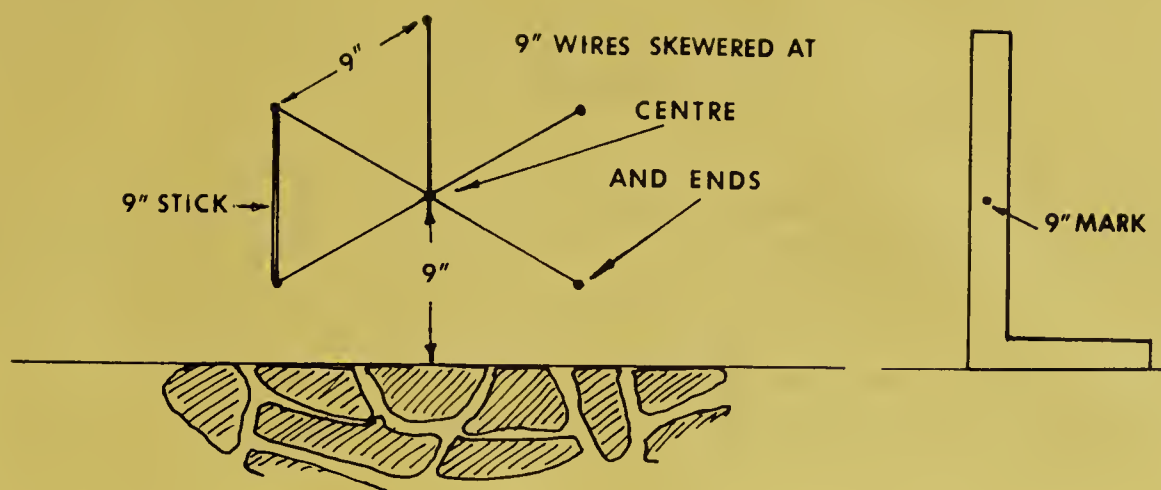
Making this little aid: By way of an example, imagine our design consists of annuals planted nine inches apart. In this case we shall require:-

- (a) Five lengths of curtain spring-wire, each nine inches long
- (b) Ten eyelets to screw into the ends of the wires,
- (c) Six skewers complete with corks and blunted points.

Arranging the aid in a fan shape

1. First prepare a stick nine inches long to measure distances round the outside of the fan. Also have at hand the L-shape previously described.
2. Using the L-shape, mark a spot nine inches in from the front edge of the border or bed. Allow a space 18" to the right and a similar space 18" to the left of this spot. Now remove the L-shape.
3. The spot you have marked is the pivot of the fan, so thread all five wires on to one of the skewers and push the skewer into the ground on that spot.
4. Spread the wires out like a fan. The middle wire must run straight from front to back, so use your L-shape to make this direction accurate. Push a skewer into the ground through the empty eyelet at the end of the wire. This will tether the wire in position.
5. Now the 9" stick will come into use. Find the first wire to the right of the middle one and place it in position with the aid of the stick. The correct position will be when the empty eyelet of that wire is 9" from the skewer you have just used to tether the middle wire. Your stick will measure this distance, then with another skewer you can tether the new wire. The first spoke on the right of the fan is now in place.
6. The second wire on the right-hand side must then be tethered in correct position. You therefore repeat the process just described, measuring 9" from the last skewer.
7. Having tethered both the wires on the right-hand side of the fan, you will follow the same procedure on the left-hand side. This completes the skeleton fan shape.

Bedding out the plants: You can now plant five annuals (preferably all alike) 9" apart in a perfect semi-circle, each plant at the end of a spoke in your fan shape. Then remove all the spring-wires but leave a marker on the pivot where they all met in the middle. Here is space for another plant, so what about a scented one in this position?



PLANTING SHRUBS

It is very likely that the plan of a decorative garden will include some shrubs and it is important that each one should have a suitable position. Many people (sighted and blind alike) give too little thought to this fact. As a result, shrubs are often planted too close together.

Your L-shapes will therefore be of great value in measuring the area required by each shrub when fully grown. Used in conjunction with a notched stick there should be no difficulty in determining exactly the right place to dig planting holes for your shrubs.

CONCLUSION

This Section has dealt broadly with paths, flower borders, beds and shrub planting. Suggestions for carrying out other gardening work will follow and miscellaneous ideas will be found in the Appendices.

WEEDING

The use of weed-killer is not recommended, especially as so many blind gardeners own guide dogs. The conventional method of weeding with a long-handled hoe is also problematic, because visually handicapped people need to work near the ground, where they can either feel or see the weeds. The only option left, therefore, is to hand-weed, using short-handled tools. These are described in the section on tools.

CAN WEEDS BE DISTINGUISHED?

It is a wise policy when weeding to keep to your own personal plot. You will then know which plants you are cultivating by their shape and texture of leaves etc., and can more easily distinguish the intruders. If you attempt to weed a plot which someone else has planted there can be disastrous results! It is difficult to keep pace with someone else's work.

FREQUENT AND SYSTEMATIC WEEDING

Frequent weeding is one of the secrets of success, and another secret is to do it methodically. For example, little landmarks along a border will divide it into sections, then the tedious job of weeding can be tackled section by section.

PEAT

Where the soil can take peat without over-increasing its acidity, weeds should not be so trouble-some. It is even possible to use measured amounts of peat when sowing certain vegetable seeds in open ground, providing you have the correct technical information. This practice will keep weeds at bay while the seedlings are starting into growth.

GROUND COVER

Growing ground cover plants is an accepted means of excluding weeds from a bare patch. It must be remembered, however, that some weeds will come through under the ground cover, the tall ones pushing up between the plant foliage. It is therefore necessary to make an occasional check on weeds despite ground cover.

ADVICE TO BEGINNERS

You may have been a keen gardener when you could see, but are unused to working without sight, so in that sense you regard yourself as a beginner. On the other hand you may be altogether new to gardening, so without doubt you are a beginner. Whichever is the case, you are likely to benefit from similar methods of working. In both cases also, the approach to starting your work is likely to be much the same, so here are a few important guidelines for your plans:-

- 1 Don't attempt too much at once. Taking into account that your rate of work will be slower than when you had sight, make a start in a small section of the garden. The area and scope of work can be increased by stages.
- 2 If you are starting the work with someone else, have some part of the garden to yourself if possible and do all the work in it yourself. If you need any help, ask for it for some particular job and make sure that help is given for that job alone. With the best will in the world your partner with sight can be tempted to fork in a little fertilizer here, to tie something up there, or hoe the weeds somewhere else, doing all this without telling you. Incidental help like this, given without your knowledge, can lead to confusion and give you a false impression of the condition of your plot and the needs of your plants.
- 3 If you have missed patches of work because you cannot see, or have made mistakes, take advice, but do not let anyone else put the error right for you - do it yourself.
- 4 If you cannot have your own section of the garden, concentrate on some special interest, such as vegetables, herbs, chrysanthemums, etc., and extend the range of interest when opportunities occur.
- 5 Very important Equip yourself with knee pads or a kneeler, as much of your work will be done on your knees, and be methodical and tidy. Keep small tools in a bucket by your side and rubbish in another bucket.



TOOLS AND OTHER EQUIPMENT

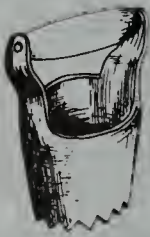
GENERAL TOOLS

The only long-handled tools in general use by blind gardeners are the spade, fork and rake. A hoe is not suitable, with the exception of an onion hoe, which has a short handle.

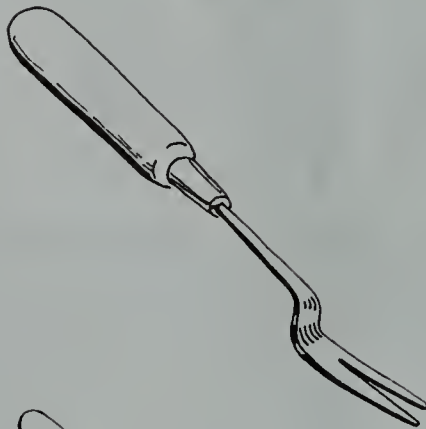
Among short-handled tools the one most needed is a hand-fork, and a trowel is, of course, essential.

PARTICULAR TOOLS

There are one or two tools which some blind people find useful and which can be recommended as additions to the basic general tools:-



1. Bulb planter. This is useful for small plants as well as bulbs. It takes out a core of soil (which it retains) leaving a planting hole with compact sides.



2. Daisy grubber. This is on the market, although not always available in every garden shop. It is intended for long-rooted lawn weeds, but some blind people like it for uprooting certain weeds in flower beds.



3. 'Bestway' Weeder. A number of blind gardeners like this tool, which can be used as a tiny rake as well as a weeder. It has a delta-shaped scratching device consisting of seven high-tensile steel claws, overall length of head and handle 13". As it is made by a small private firm, the address must be given in the hope that the firm will continue to function for many years. It is:-

H & F V Whitehead, Ltd., The Towers,
Clayton, Bradford, Yorks.

OTHER EQUIPMENT

A room thermometer which can be used in the greenhouse (obtainable from the Royal National Institute for the Blind). Single-handed shears (or sheep shears) - see section on lawns. As previously mentioned, knee pads and a bucket or trolley for tools.

HOW TO MAKE THE L-SHAPES

HOW THEY ARE USED

The various uses of L-shapes are described in the following Sections of our Manual:-

1. 'The Garden Plan', which deals with their function in flower borders and beds.
2. 'Can I mow the lawn?' 'Edging the lawn' and 'Lawn Care', which note their uses in every operation connected with the care and treatment of lawns.
3. 'Digging, forking and raking', which stresses the need for reliable aids when preparing the vegetable plot.
4. 'Seed sowing inside and outside', which shows L-shapes as invaluable aids for running straight lines across the vegetable plot.

MAKING THE L-SHAPES

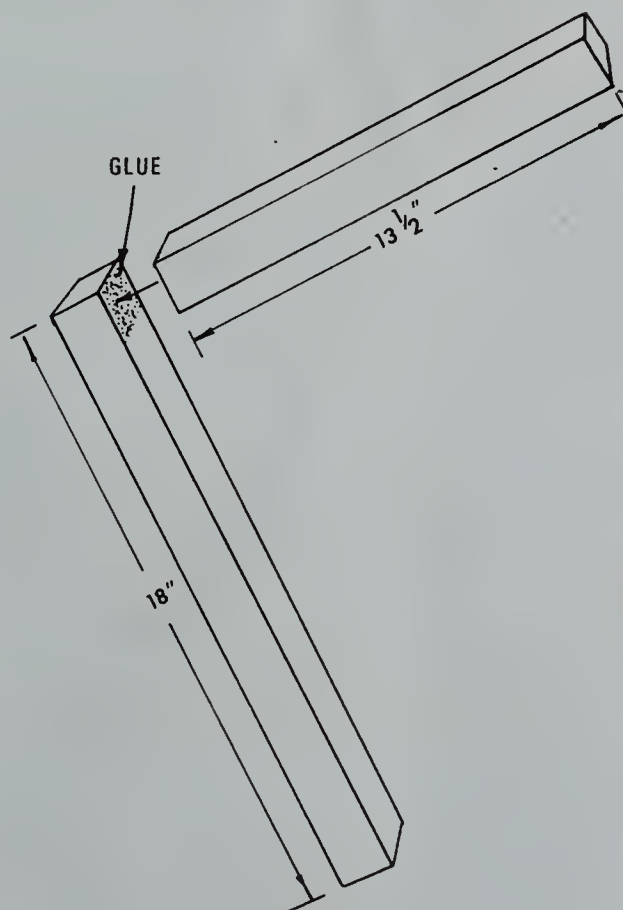
If these shapes are needed for use in all aspects of gardening they should be made from lengths of wood $1\frac{1}{2}$ " square, but if their use is limited just to the flower garden there is every reason for choosing material of lighter weight. Whatever the material, the working principles will be the same.

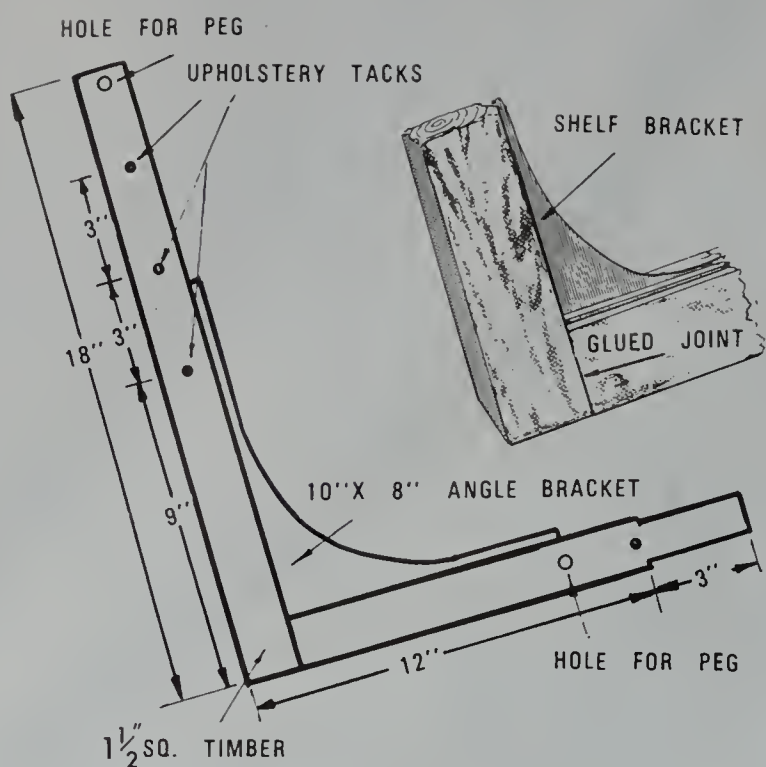
DETAILS OF CONSTRUCTION

Any method of construction can be followed, according to the skill of the carpenter, provided the results are rigid and lasting.

For a simple method of construction which does not demand much skill, take a length of timber one and a half inches square (after planing) and cut it into four pieces. The lengths of these pieces can be decided by the gardener to meet his own requirements. For multi-purpose use, however, it is suggested that two of the pieces are each eighteen inches long and the other two are each thirteen and a half inches long.

Then, with wood glue, join the end of a $13\frac{1}{2}$ " piece to a side-end of an 18" piece, thus forming a right-angle. You now have your L-shape.





This method of joining the two pieces of timber will add 1 1/2" to the 13 1/2" piece, making the measurement of that arm 15" overall, from the outside corner of the L-shape to the end of the arm. The outside measurement of the other arm will be 18" as before.

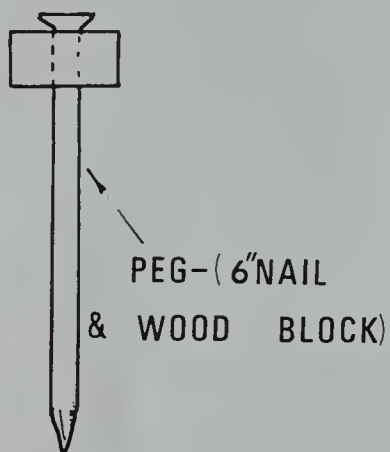
Strengthen the joint

To make certain that the two arms are firmly fixed together, screw a good shelf bracket into the corner of your L-shape.

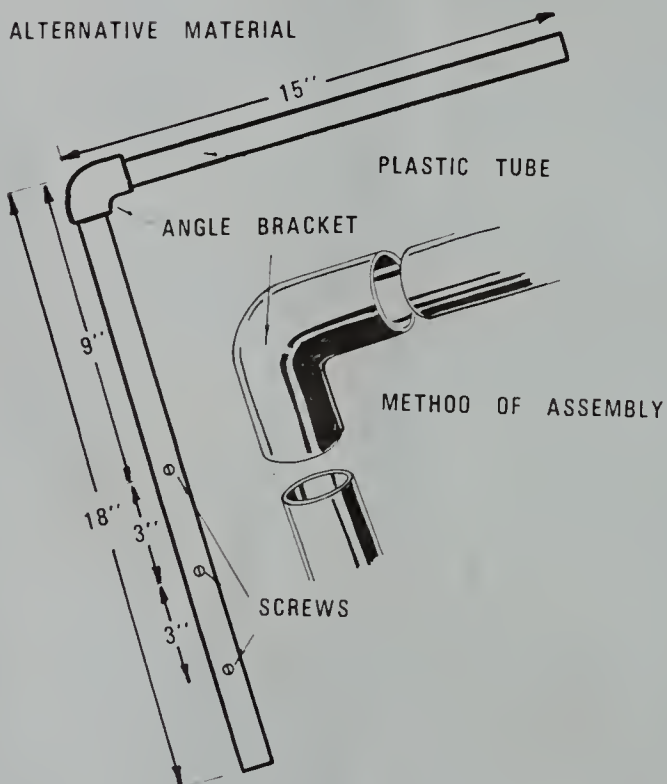
Construct the second L-shape in the same way.

HOLES FOR PEGS

You will need to drill holes for pegs near all the ends of the two L-shapes, as they will need to be tethered while in use. The pegs themselves can be made from six-inch nails with a knob fixed on top.



ALTERNATIVE MATERIAL



MEASUREMENT MARKS

Leave the fifteen-inch arm of your L-shapes unmarked. They can then be distinguished easily from the eighteen-inch arms, which carry the measuring marks. On the latter put marks at 9", 12" and 15" from the outside corner of the right-angle. These can be made either with studs or notches. If notches are used, it is a good plan to run wire completely round the arm at each notch. This makes the measurement easier to feel.

PROVIDING AN EXTENSION

Some gardeners may wish to extend the L-shape for use:-

- As a guide for mowing and edging the lawn, or
- As a guide on the vegetable plot for digging, forking and raking.

If so, it may be possible to obtain some pieces of 1 1/2" square metal tubing to make slip-in joints to fit the extension to the L-shapes. The extension would be of 1 1/2" square timber, which can be cut to whatever length the gardener desires.

Fixing the slip-in joints

The square metal tube joints (cut to six inches long) should be fixed permanently to the two ends of the extension. This will leave the measurements of the L-shapes unaltered.

It will, of course, be necessary to chamfer down the ends of the extension to take the joints. The same applies to the L-shapes. It is suggested that the chamfering is done on the fifteen-inch arms of these shapes, as this will leave the 18" arms free to be used for measurements.

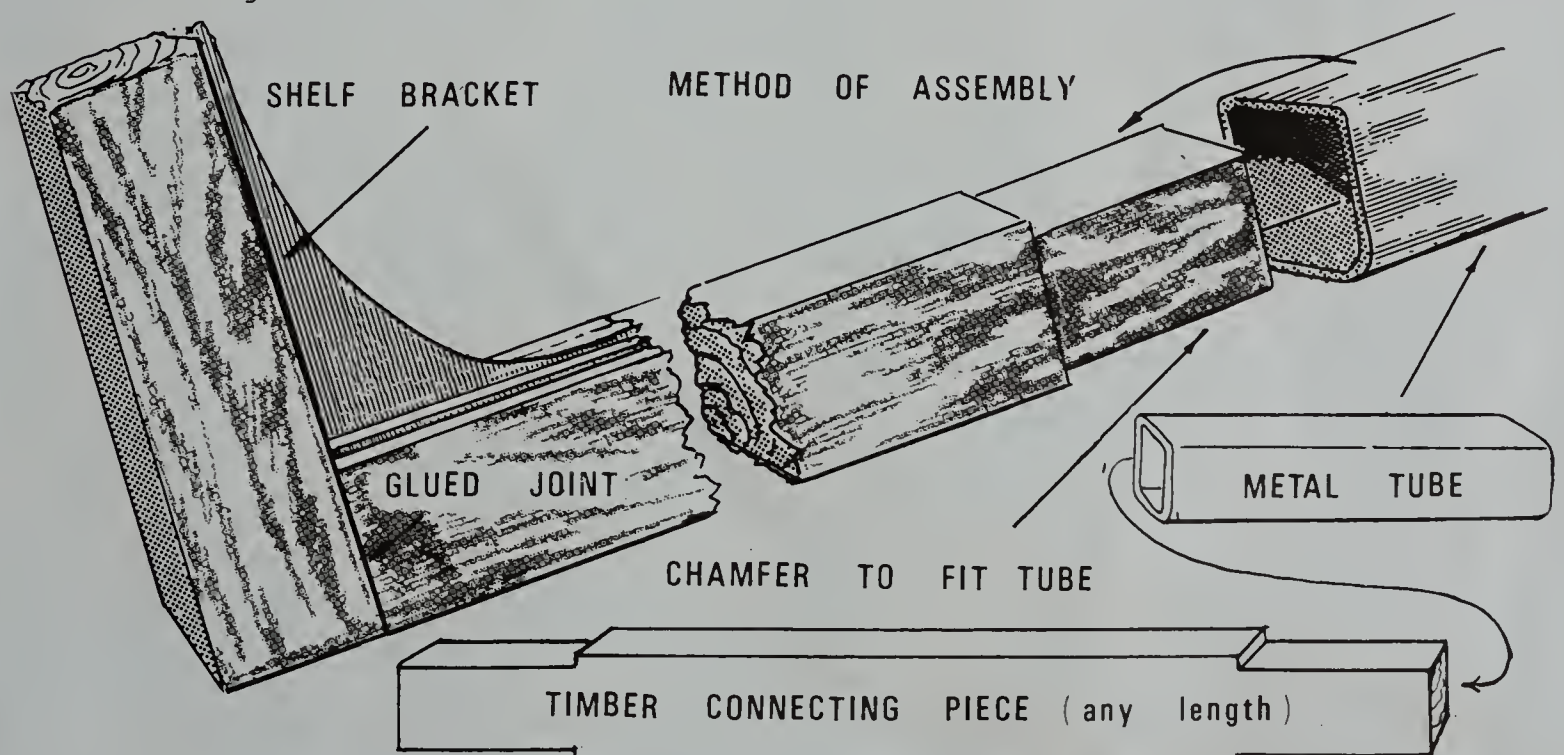
Availability of metal tubing

It may not be easy to obtain this tubing, but possible sources of supply are:-

- (a) Small firms dealing with supplies of metal,
- (b) Junk shops,
- (c) Supplies to Technical Training Institutes.

In the event of square tubing being unobtainable, individual gardeners will probably work out their own methods of fixing joints. Whatever method is followed, it is advisable to keep two important factors in mind, which are:-

1. If your L-shape is to serve as a multi-purpose piece of equipment any extension you make must be detachable.
2. In order to rely on the accuracy of your L-shapes it is better to keep their construction in solid form, i.e. without hinges (as these are easily strained in garden use) and without any other means of folding. Reliable accuracy is a greater advantage than the convenience of folding.

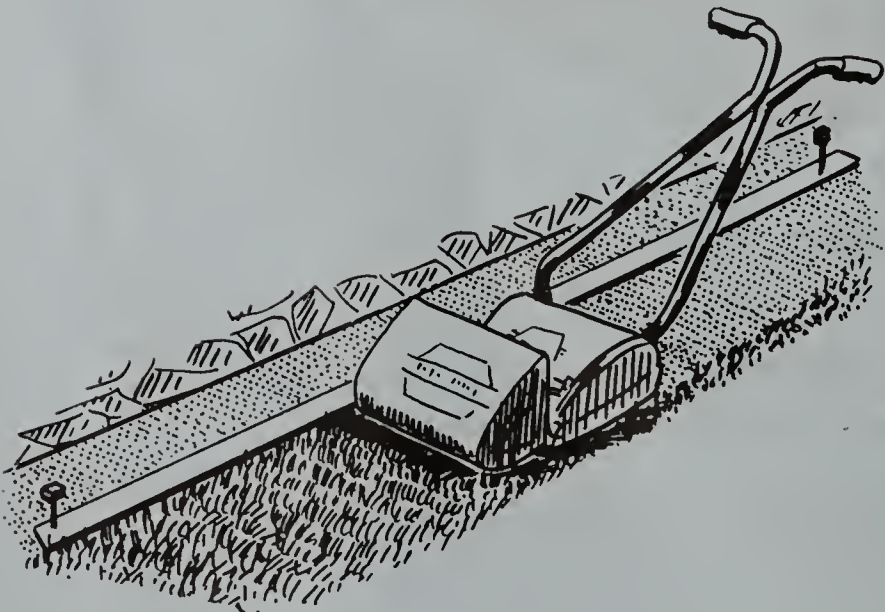
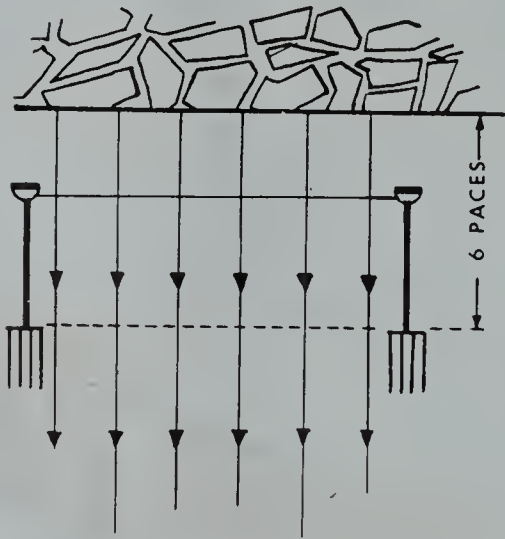
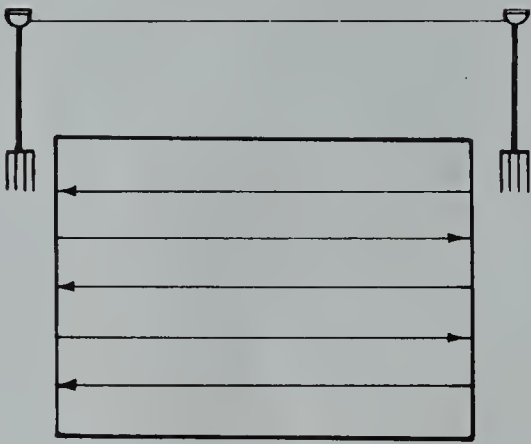
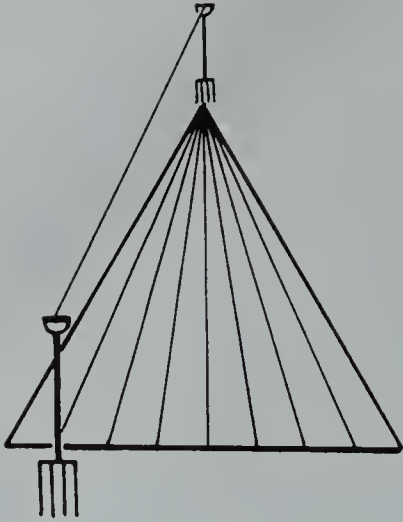


Note: Imperial measurements have been given in these instructions because at the time of writing the transition to the metric system is not complete.

CAN I MOW THE LAWN?

FIVE DIFFERENT METHODS HAVE BEEN SUGGESTED

BY BLIND GARDENERS



Mr. E., totally blind, manages his triangular lawn using a hand mower. A guide line for mowing the first strip is provided by a cord stretched between a garden fork at the apex of the triangle and a second fork roughly two feet from one corner of the base line. For mowing the next strip the second fork is moved another 2ft. along the base and this process is repeated until the whole lawn has been mown. The first fork is not moved at all.

The same method can be used for a rectangular lawn, moving both forks for the mowing of each new strip.

Mr. B. uses a hand mower for his large lawn. Only one side of the lawn is straight and this is flanked by a path. He makes a row of cuts from this path, starting from the farthest end. He pushes the mower forward six paces, then pulls it back. Moving slightly along the path, he makes a second cut six paces in from the path, and pulls the mower back. This process is repeated until the section of lawn nearest the path is completed.

Then he fixes a line similar to the one already described, parallel with the path and six paces distant from it. This gives him a new straight starting line for another row of cuts, to complete a second section. So he continues until the entire lawn is mown.

This method helps Mr. C., who has an electric mower, as it enables him to keep the cable always behind him.

Miss J., using a hand mower, finds the R.N.I.B. Sound Beacon helpful. Like Mr. B., she also works across the lawn from a path at one side. Starting from one end of the path, with the Sound Beacon opposite on the other side of the lawn, she mows straight across to it. She then moves the beacon along about one foot, pulls the mower back to the path, and makes her second cut, guided by the sound of the beacon. Thus, foot by foot, she covers the whole lawn.

Mr. F., totally blind, cuts his lawn with a hand mower. He pegs a long strip of wood to the ground and uses this to guide his foot. Before mowing he cuts a ten inch strip round the edges with hand shears. This is a precaution against running the mower over the edge. He uses one-handed shears, which leave him with a free hand to feel the grass.

WHAT TYPE OF MOWER IS BEST?

The best choice is a hand mower that is easy to adjust. Watch for any possible market developments in fixing a grass box at the rear instead of the front.

A battery mower can be worked by a blind person. Choose one as quiet as possible, because noise disturbs a sense of direction. Look also for good safety controls, two speeds and easy adjustments.

Some blind people have electric mowers of the type controlled by one hand, leaving a free hand to hold the cable away from the machine. Avoid any model with small wheels, as this can turn on its side. Look for well guarded blades at whatever height they may be set, also good insulation everywhere, wide wheels and rollers (to maintain ground grip). There must be an automatic stop to power when the operator ceases to hold the driving handle.

Don't use any larger type of electric mower and don't have a petrol driven machine. Both are unsafe for blind people and the latter is also too noisy.

CAN I KEEP LAWN EDGES TIDY?

DIFFICULTIES ARISE WHEN FLOWER BEDS BORDER THE LAWN

- (a) Some of the plants may overspread the edge of the lawn.
- (b) The grass box on the mower can damage border plants.

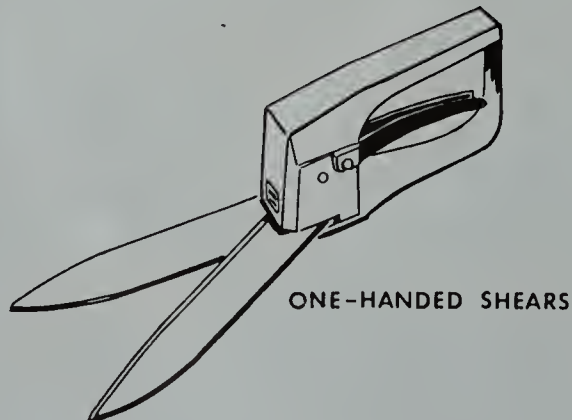
BLIND GARDENERS FIND VARIOUS WAYS OF MEETING SUCH DIFFICULTIES

1. By stocking the part of the beds nearest the lawn with low-growing plants.
2. By keeping the channel at the lawn edge deep and clear of weeds, dead leaves, etc. A clearly defined channel also provides advantage to any blind gardener who may be able to trim lawn edges with long-handled shears, as it helps to guide the blades.
3. Wise gardeners substitute the channel by a flat surface at lawn level between the lawn and flower beds. This can be:-
 - (a) Crazy or other paving, which is fashionable. This prevents soil falling on the lawn and facilitates work on the flower beds in damp weather.
 - (b) A strip of wood, treated with Cuprinol, fixed firmly in the ground surrounding the lawn.

Either plan renders it possible to make mower cuts close to the edge of the lawn.

SHEARS

It has already been stated that most blind people like one-handed shears, as they leave a free hand to feel the grass. When buying these shears, look for a pair with a metal plate level with the ground, as it helps to keep movement steady. Without this plate the blade can tip up.



LAWN CARE

Feeding, raking and spiking are three of the many operations which immediately spring to mind in connection with the care of lawns. For these operations - and for others like them - a definite method of work is needed if satisfactory results are to be obtained. Here therefore, as elsewhere in the garden, your L-shapes will be useful.

FEEDING

Directions for feeding are usually given in the terms of a stated quantity of fertilizer per square yard. Some method of measuring square yards must therefore be devised.

This can be done with sticks, using the straight edge of the lawn as a starting point, then moving the sticks yard by yard. If this method is used, your L-shapes (squared with the edge of the lawn) will help to ensure that the sticks are running straight.

Another method would be to use the L-shapes themselves to determine the areas for spreading fertilizer. Again using the straight edge of the lawn as a starting point, place your two L-shapes together, with the open ends of the eighteen-inch arms touching. They should be flush with the edge of the lawn. This will give you a length of thirty-six inches to form one side of the area you want.

The two fifteen-inch arms of the L-shapes will partly mark two more sides of the area, so with a little guess-work you can approximately measure half a square yard to take half the prescribed quantity of fertilizer. Further areas of half square yards can be marked by turning the L-shapes over to obtain progressive movement.

Whichever method is followed, you must always peg sticks and L-shapes in position while spreading the fertilizer.

RAKING AND SPIKING

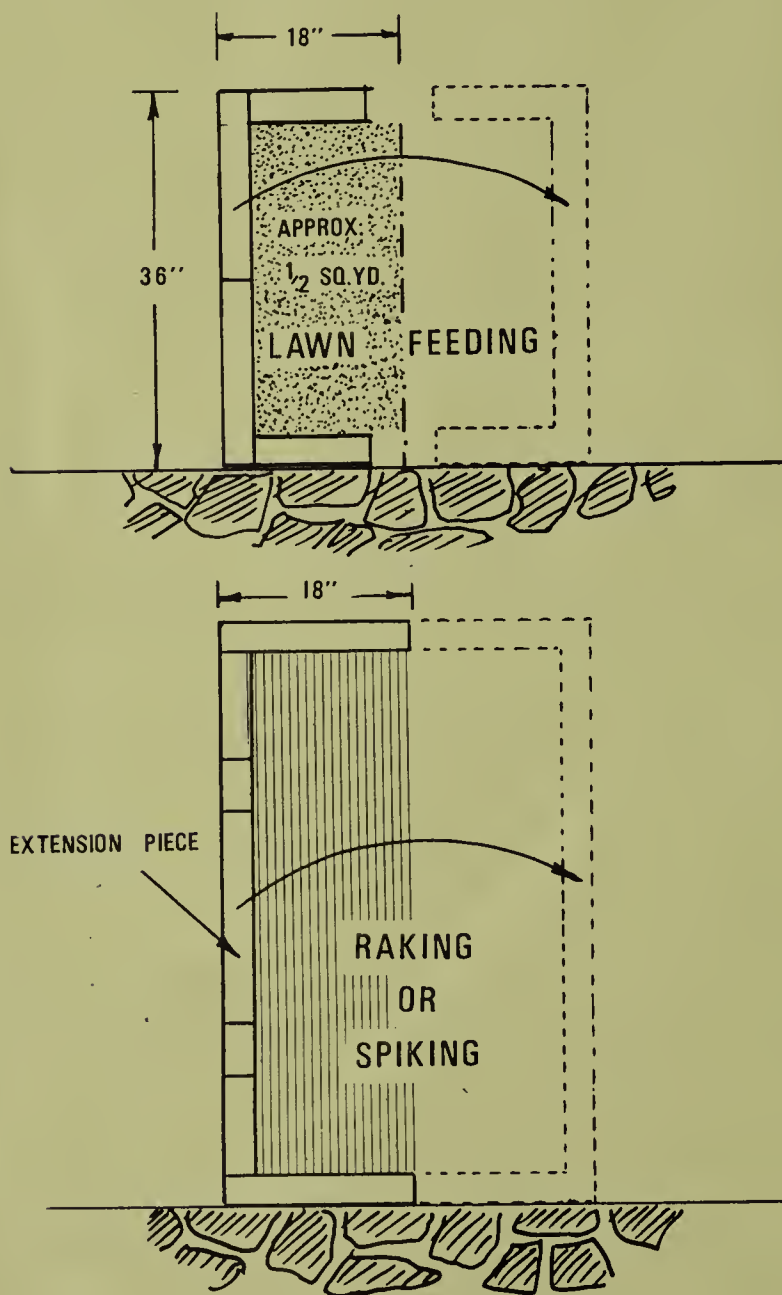
Both these operations need to be worked in sections, so once again the L-shapes are useful. If you have made an extension with slip-in joints (as described in the Section dealing with the construction of L-shapes) you will be able to fix up a complete aid for both raking and spiking.

You must work inside this aid, using the eighteen-inch arms to determine the width of the section to be raked or spiked. When one section has been worked, turn the aid over for your work on the next section - and so on.

Note that as a precaution against accidents when spiking, it is a good idea to have a narrow board between one's feet and the fork. This also helps to guide the fork.

ALTERNATIVE METHOD FOR RAKING AND SPIKING

As an alternative to making an extension for your two L-shapes you can run a plank between them, pegging the plank to keep it in position. You would still square the L-shapes with a straight edge of your lawn, placing the eighteen-inch arms flush with the edge and pegging them. The fifteen-inch arms would then touch the two ends of the plank. With this method you would have to move L-shapes and plank separately, whereas L-shapes with an extension can be turned over as one unit, because they all fit together with slip-in joints whenever desired.



DIGGING, FORKING AND RAKING

ON THE VEGETABLE PLOT

Out on the vegetable plot we have to cope with an area much wider than our flower beds, so it is essential to find effective techniques for the work in hand. When considering these, the problem of orientation in this larger area is of prior importance. This is due, not only to the size of the plot, but also to the fact that it is probably open, without walls or tall shrubs to act as sounding boards for direction.

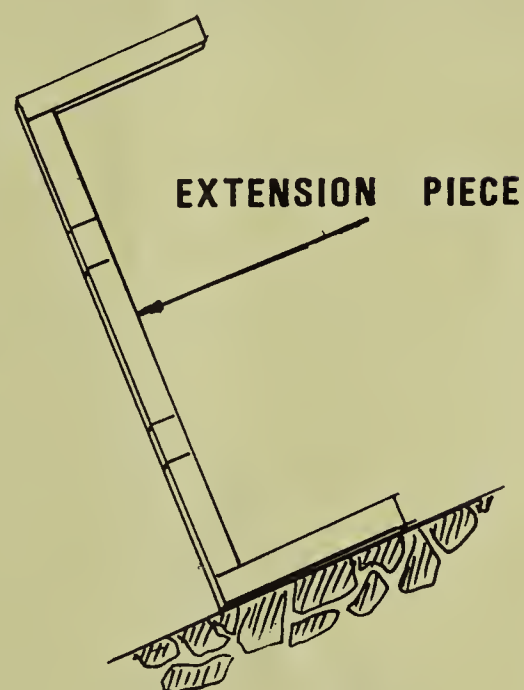
Aids for use on the vegetable plot must therefore be designed to give help in working consistently straight across the plot, whether for the preparatory digging, forking and raking or for the later stages of vegetable cultivation.

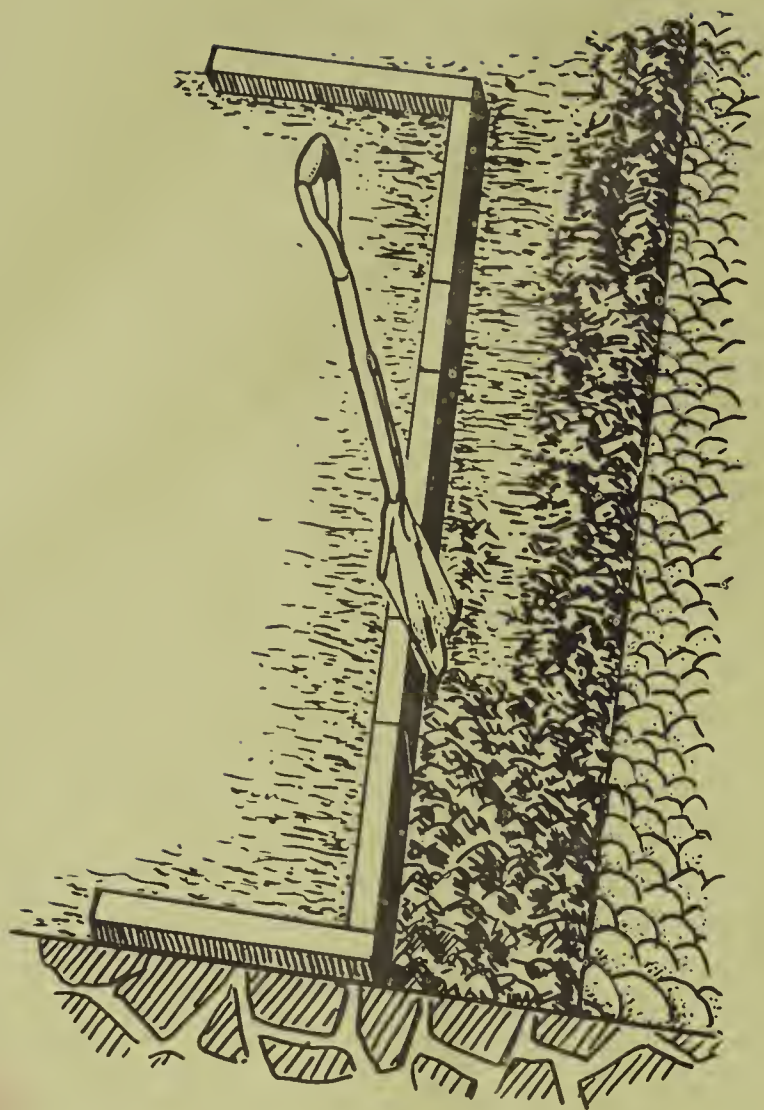
DIGGING THE PLOT

The question is often asked: 'How can I dig straight without sight?' One answer is to use a plank as a guide, pegging it down at both ends to keep it in place. Then a further question arises: 'How do I know that the plank itself is running straight?'

The use of a plank can have some disadvantages. The first is that it may not be long enough to stretch right across the plot, and joining two planks with hinges is not a very practical idea. Secondly, the plank and the L-shapes will have to be lifted separately when moving them to new positions on the plot.

A simple invention. An alternative to the plank was invented in 1968 by a totally blind gardener who has the added disability of deafness. He gave us the idea of using L-shapes with a connecting extension that can be fitted on when needed. He also thought out the multi-purpose function of this aid. (Note that details of construction were given in the Section in our Manual describing how to make L-shapes).





This aid can be used for digging the vegetable plot in the same manner as a plank. It does, however, provide the advantage of fitting together to make one unit, which is easy to move along the plot. A second advantage is that the fitted extension can be whatever length the gardener desires.

USING THIS AID FOR DIGGING

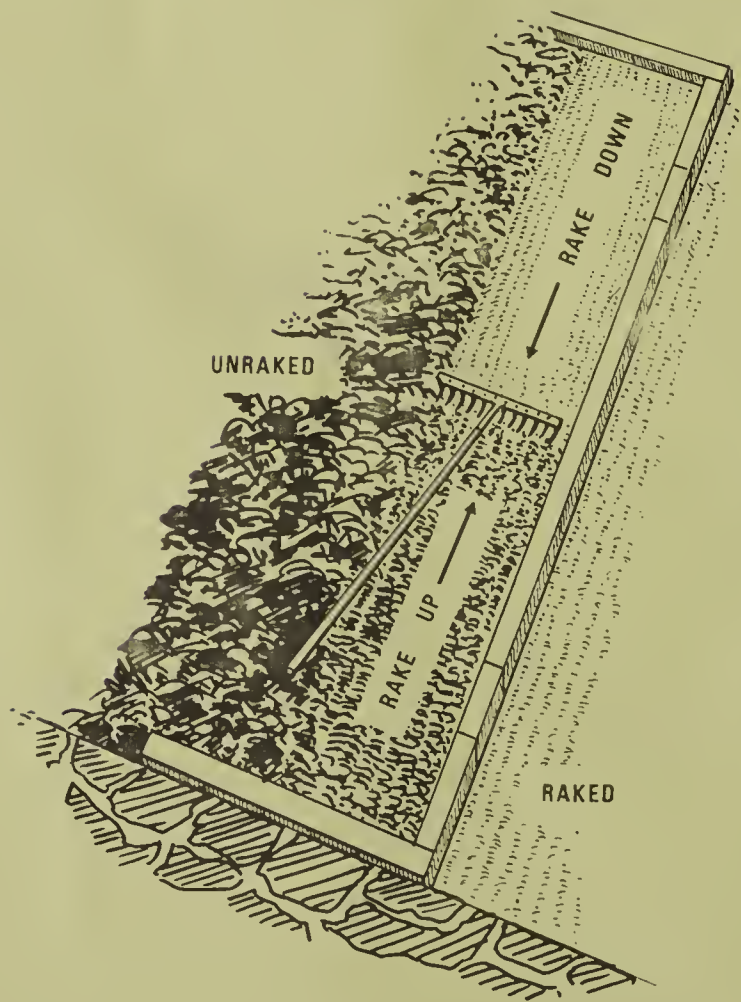
First fit the extension to both L-shapes. Now peg one L-shape flush with the straight edge of the plot, and also peg the L-shape at the opposite end. Dig with the spade on one side of the connecting extension and the toe of your boot touching the other side. When the first trench has been dug, move the aid backwards and peg it ready for the digging of the second trench - and so on.

FORKING AND RAKING

You do both these operations inside the aid. Make your start facing one of its 18-inch arms and work backwards to the opposite 18-inch arm, keeping the side of your boot in contact with the connecting extension.

When forking, you will finish this strip of ground, then turn your aid completely over. It is then ready for you to fork a second strip. Repeat this process until the whole plot has been covered.

A similar method is used for raking, except that each strip must be raked twice in order to level a fine tilth. Your first raking is in the same direction as you did the forking, but for the second raking you reverse this direction. (In other words, the strip is raked from A to B, then back again from B to A). This done, you turn the aid over and work the second strip - then continue strip by strip to the end of the plot.



INDOOR SEED SEWING

No blind gardener can managing pricking out, so it is essential to find some method of seed sowing which will render this process unnecessary. Fortunately, there are effective alternative methods that fulfil this purpose. These are:-

- (a) To use individual containers, or
- (b) To space the seeds individually in a tray.

Both these alternatives offer yet further possibilities for choice of the means by which they can be operated.

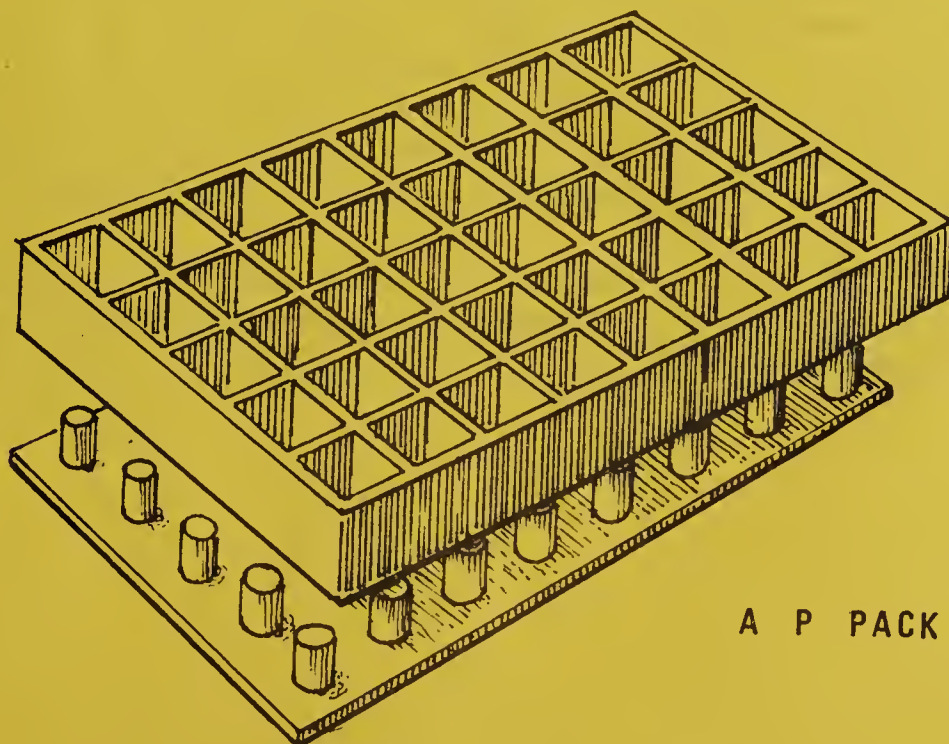
INDIVIDUAL CONTAINERS

Peat pots. For many years the use of small peat pots solved the problem of pricking out, as seeds were sown individually in them and the seedlings allowed to grow until ready for planting out in open ground. Pots and seedlings were then planted together and the pots disintegrated in the soil.

This method is still in use, but the cost of peat pots has greatly increased and many gardeners are finding this prohibitive, particularly in view of the fact that peat pots can only be used once.

A.P. Packs. A substitute therefore came on the market, and this - with careful handling - will last for repeated use. The trade name is A.P.Packs. These (at the time of publishing our Manual) are becoming more widely known and used. The emergence of any other commercial product in future years is, of course, unpredictable.

A.P.Packs consist of polystyrene slabs (something like trays) of bottomless cups. Seeds are sown individually in these cups and the seedlings left to develop. At planting-out time they can be pushed out of the cups with another slab designed for the purpose. They come out, with their roots holding together a compact ball of soil, ready for planting out.



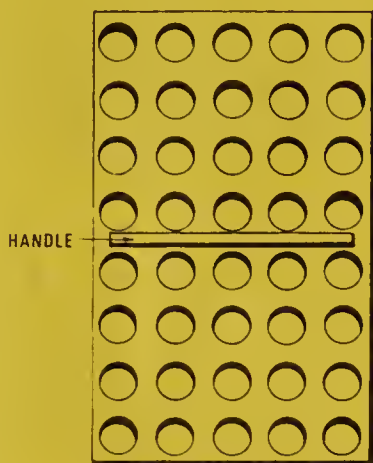
A P PACK

SPACING INDIVIDUAL SEEDS IN A TRAY

Using a board drilled with holes. For seed sowing in a tray many blind people like the aid of a board, drilled with holes, and fitted inside the top of the tray. The board is removed when seeds have been sown in all the holes. If a board like this is used you must be sure:-

- (1) that it is cut from material that will not warp,
- (2) that the holes are not too close,
- (3) that the holes are big enough to take the largest seeds, and
- (4) that the board can be lifted away from the tray without disturbing the seeds.

Such boards should be specially made for the purpose. Ready-made material such as peg board, for example, is quite unsuitable, because the holes are too small and are much too close. Plastic board about a quarter of an inch thick is ideal if it can be obtained, as it is too solid to warp and is easily kept clean by washing.



Forty holes are suggested, in five rows of eight (to fill a standard seed tray) each hole one inch in diameter. There should be a handle for lifting. With holes this size, each seed can easily be covered with a thin layer of sifted compost or sand, thus saving the difficult process of spreading it over the whole tray. One inch diameter is also a comfortable size to take finger and thumb holding a seed.

A dual purpose aid. As an alternative to a board with holes, some gardeners may like to make an aid suitable either for cuttings in a tray or for seeds. It is a wooden surround for the tray, standing upright something like an outside wall. The top edge of this wooden wall is slightly higher than the rim of the tray. This added height allows five holes to be drilled each end of the surround, so that five green sticks can be pushed through the holes to rest flush on the rim of the tray. These sticks will be the guides for inserting cuttings or for sowing seeds.

As the sticks rest on the rim of the tray they do not actually touch the compost, so there is no danger of disturbing seeds when the surround is lifted.

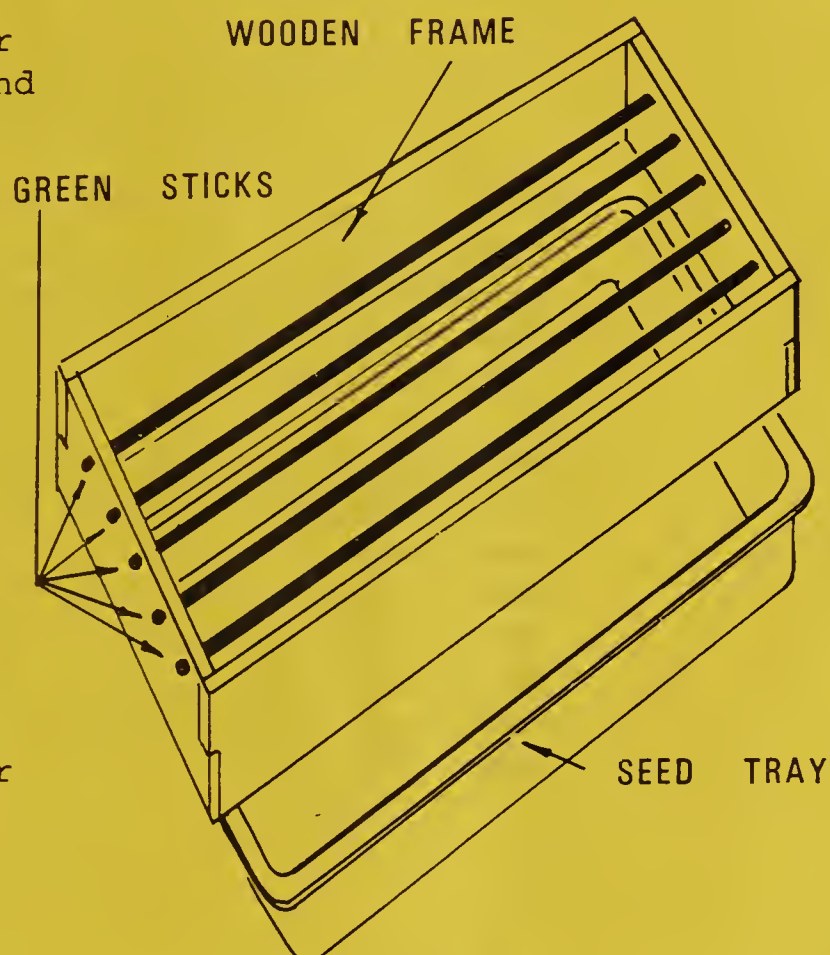
Using this aid. People accustomed to finger work will use the 'surround' aid with ease, but anyone with arthritic hands may experience difficulty. The drill is as follows:-

For cuttings: Place two fingers of the left hand on the green stick that is furthest away, resting them at the left end of the stick.

(it is assumed that the first and second fingers will be used). With the right hand make an insertion hole for the cutting by your first resting finger. Still keeping the two resting fingers on the green stick, with your free right hand pick up a cutting from the bench on your right, and insert it in the hole. Firm it in, then move your two resting fingers beyond the cutting, one stage further along the green stick. Insert a second cutting as before and continue the procedure until the tray is filled.

For seed sowing: Use two resting fingers to space individual seeds just as you did for cuttings. Drop a seed on the compost by your first resting finger, then hold the green stick with your right hand at the point where you dropped the seed. While holding this point, move your resting fingers along to the next stage. Your right hand can then be free to pick up the next seed.

This seed-sowing technique may appear awkward, but practice will establish an easy rhythm which can become quite rapid. It is advisable to have the seed in a small open container on the bench at the right.



THE SEED ITSELF

At one time pelleted seed was recommended for individual sowing, but experience has proved that it is not suitable for use by blind people. The reason is not only that germination seems to be unreliable, but also because the substance making the pellet easily breaks away. It is therefore impossible for anyone without sight to know the difference between a piece of crust with a seed in it and a piece with no seed.

Some seed is large enough to be handled singly without difficulty, but fine seed poses a problem. The solution we have found is to make our own little pellets.

Making the pellets. This is done by wrapping the fine seed in paper. The paper chosen must be a kind which will very quickly disintegrate in soil out of doors or compost in the seed tray. Originally we used cigarette paper, which proved successful, especially out of doors. Recently there have been mixed reports of both failure and success.

Soft toilet paper, tissues or kitchen paper give good results. The pieces used must be very small, roughly, three quarters of an inch square. Proceed as follows:-

1. Have the pieces of paper ready.
2. Spread a small quantity of fine seed on a flat surface, such as a plate.
3. On a damp finger pick up one (or two - or even three) seeds.
4. Rub the seeds on a piece of the prepared paper and screw or fold it up.

These pellets can then be sown at stations along a drill in open ground or at intervals in a seed tray. It will be remembered that if a board with holes is used as an aid for seed sowing in the tray, the holes must be large enough to take the pellets.

With normal general conditions the paper will quickly disappear and the seeds germinate. You may find there are places where two or three seedlings come up on the same spot (because your damp finger happened to rub more than one seed on the paper) but even so, the task of thinning these out will be far simpler than tackling a whole row of crowded seedlings. The experiment of sowing seed in this way is well worth a trial.



SEED SOWING OUT OF DOORS

In the last Section we suggested techniques to eliminate the difficult process of pricking out after indoor seed sowing. Outside on open ground there is a problem closely related to indoor pricking out, which is the question of thinning out tiny seedlings along drills on the vegetable plot.

Fortunately, the techniques that can overcome pricking-out difficulties indoors are also a key to solving outdoor thinning-out problems. It will be remembered that both of the indoor techniques suggested were based on individual seed sowing as opposed to sowing by general distribution.

One of these techniques produces small plants growing in compact balls of soil, ready for planting out, so if this preparatory method is used there will be little or no need for any seed sowing out of doors.

Another suggested technique for indoor seed sowing was that of spacing individual seeds at intervals in a tray, and a similar idea can also apply in open ground if the gardener so wishes. Here, to avoid thinning out, seeds can be spaced at stations along the drills. Large seeds will present no problem, while fine seeds can be wrapped in paper as previously described.

ON THE VEGETABLE PLOT

Rows of vegetables across a plot should be straight. This is not merely because they look good, but also because uneven rows can waste valuable space. Another feature of the vegetable plot is correct spacing of the plants - which is necessary for the sake of healthy growth.

Taking these two requirements into consideration, the blind gardener needs:-

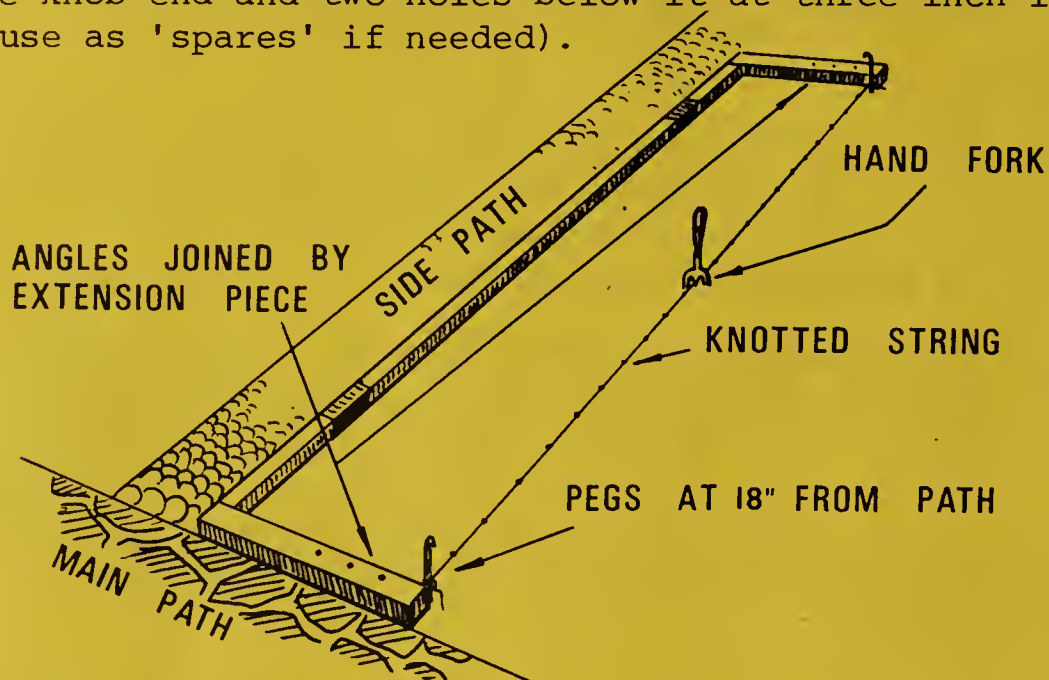
- (1) To find some means of ensuring that drills and rows are straight, and
- (2) To work out a satisfactory method of measuring distances between plants.

Straight drills and rows. From the various suggestions already made in our Manual it will be obvious that a pair of L-shapes can provide the answer to the question of making straight drills and rows across a plot. First comes the preparation of a perfectly straight edge to the plot, then our rigid L-shapes can be squared up with the edges, and pegged opposite each other.

Keeping the rows straight

The gardener can then connect the two L-shapes by whatever means he chooses. Some people like a knotted line, others a plain line, while some prefer a measured length of wood or a bamboo cane. A great deal depends upon the size of the plot and whether or not the gardener has any sight.

Whatever connecting link is chosen, its primary purpose is to be a guide for making straight rows. To this end, a knotted or plain line must be pulled taut, and tethered at intervals to prevent movement. The pegs which hold the line must be strong enough to keep it taut. One idea is to make metal pegs, fifteen inches long, with a hole for the line at the knob end and two holes below it at three-inch intervals (for use as 'spares' if needed).



Distances between plants. Much has already been said in our Manual about methods of measuring distances between plants, so repetition is unnecessary. Gardeners all have their own personal preferences.

ADDITIONAL HINTS

1. It is a practical idea to fix a spare line by drills or rows, leaving it there until plants have grown to a reasonable size. This helps the gardener when treading between the rows.
2. Labelling rows of vegetables is a problem for people who do not read Braille. Possibly different vegetables could be indicated by small pegs with knobs of varied shapes.
3. Weeding between rows is essential but somewhat difficult. Many blind gardeners use a bamboo cane or strip of wood, pegged by the row as a guide. They can then use an onion hoe to weed between the rows. Weeding between the plants has to be done by hand.
4. An onion hoe is also useful for earthing up potatoes.

PRUNING

Pruning is such an important part of garden work that it cannot be neglected, so we must consider whether or not it can be done by a blind person. Obviously a beginner - whether sighted or blind - needs advice from a gardener with good knowledge of the subject, and a beginner who cannot see is likely to welcome some additional ideas for carrying out pruning operations. The ideas we are giving here may help beginners, and perhaps also some other more experienced gardeners who have not tried any pruning since the onset of visual handicap.

Let us start by thinking about shrubs, as there is no reason why these subjects cannot be pruned by a gardener without sight. (Some people may wish to reject shrubs with thorns.) We shall deal with fruit trees later, as we have reservations about the advisability of attempting this more specialised work.

PRUNING OUR GARDEN SHRUBS

The first essential is to gain a thorough knowledge of each individual shrub. The ideal is to plant all of them ourselves, then from the earliest stages we can learn how to give each one the right treatment for its particular habit of growth.

It is realised, of course, that often this ideal situation does not exist, because the shrubs are already established. In this case the wisest plan is to make a thorough study of each shrub before attempting to prune it. We shall need to know:-

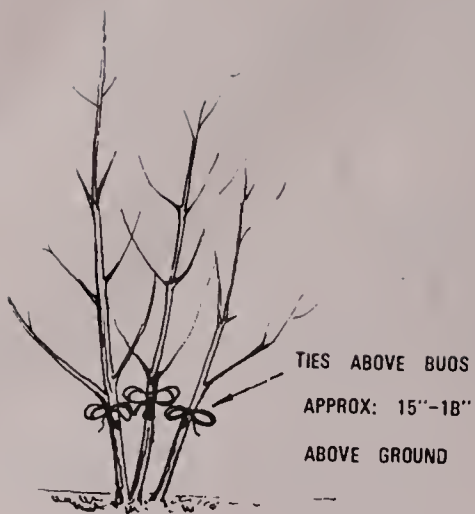
1. When to prune. The time of year is important, as for example, the difference between pruning early and later-flowering clematis.
2. How to prune. We must learn the type of pruning which each shrub in our garden needs. Ignorance will often lead people to cut away the very wood that will bear the following season's flowers.
3. Natural habit, height and shape. We must first study these aspects by learning from a book, a catalogue or an experienced gardener. Next we must apply the knowledge gained by making it practical and feeling our shrubs until, one by one, we are completely familiar with them.

Information about the shrubs, combined with the practice of feeling them, will help to give us confidence for pruning. There are also certain methods we can adopt to assist our confidence.

METHODS WHICH MAY PROVE USEFUL

To gain confidence

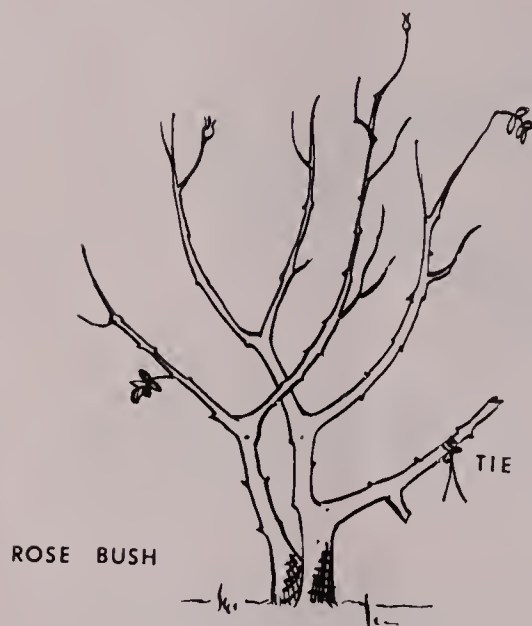
A beginner may be afraid of making a pruning cut at the wrong place. To avoid the disaster of a mistake, select what appears to be the correct pruning point, then tie a piece of string round it. You will then be able to check that the point chosen is correct, before you actually make any cut.



THE COMMON BUDDLEIA

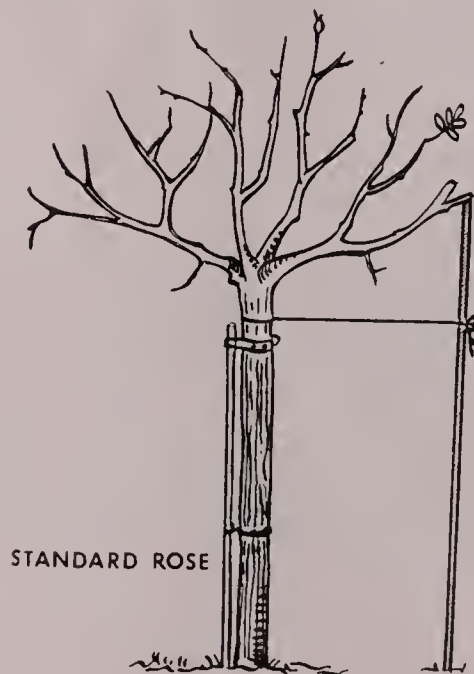
To save time

It is a good plan to mark the stem where pruning is started. This can be done either by putting a tie round it or inserting a cane in the ground beside it. The stem can then be found again quickly, so that you can refer back to it, in order to compare its length with other stems.



To check uniform shape

A device used by some sighted gardeners when pruning is a stick, to measure the distance from the centre of a bush to its perimeter. It is used to ensure an even, all-round shape to the bush.



For the blind gardener this would be a difficult method of checking shape, but a similar idea could be worked out with string and a cane. Tie one end of the string to the central stem of the bush and fasten the other end to the cane. (The string must, of course, be the correct length desired.) Insert the cane in the ground at the perimeter of the bush, but move it from time to time to check all-round shape. This method might not suit every bush, but it could be very useful for pruning standard rose trees.

GENERAL HINTS

Roses. Not every blind gardener likes the idea of pruning roses, but there are some who will do this job despite the thorns. A suggestion which has come from several non-sighted people is to wear gloves with a hole cut for the pad of the first finger. The pruning points can then be found with this finger, but the backs of the hands are protected against scratches. A completely different type of hint is given by a gardener (totally blind) who prunes over one hundred roses himself. He says that his secret is to know every bush separately and in detail - and he adds that, just like people, no two are alike.

Shrubs in general. It is often easier to gain an idea of the shape of a shrub if you feel it from the base upwards. (In the case of rose bushes this can be a painful experiment, so be careful).

Cold hands. Pruning in late autumn may have its problems for blind people who suffer from cold hands, but it is comforting to remember that pruning should not be done if the day is so cold that night frost is likely. In any case, late autumn pruning is not necessarily always the rule, but if it has to be done at that time of the year, some blind gardeners overcome the difficulty of cold hands by wearing mittens.

PRUNING FRUIT TREES AND BUSHES

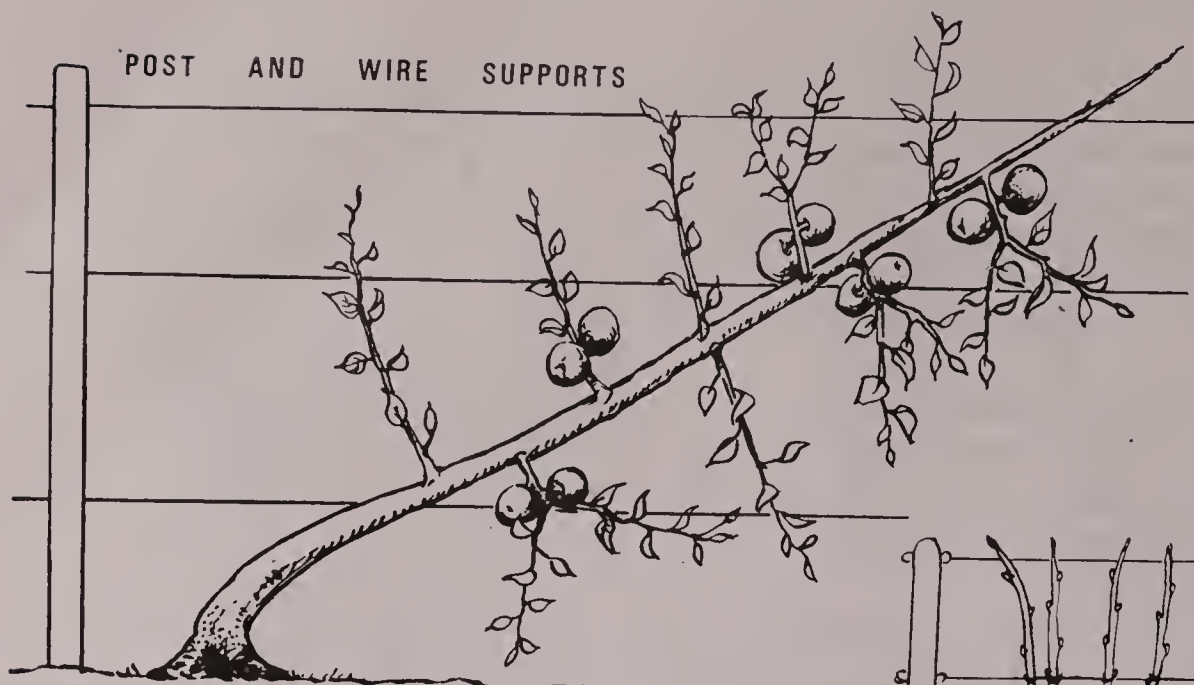
Everyone will agree that pruning of fruit trees and bushes requires special knowledge. Probably most blind gardeners will confine their pruning to the necessary work on soft fruit, although there may be a few whose specialist experience enables them to do more than the average person.

Generally speaking it is best if the larger fruit trees - apples, pears and stone fruit - can be pruned by someone with both sight and experience. It is all too easy to harm the crops.

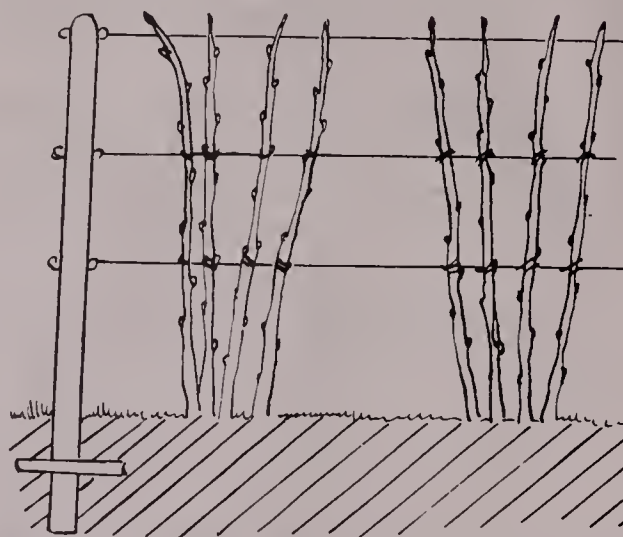
The advantage of training fruit trees and bushes

If we have the opportunity of planting our own fruit trees and bushes, we can choose methods of training that will allow easy access to them, thus simplifying their cultivation and the harvesting of crops. Apples and pears, for example, can be grown as cordons, and even gooseberries and red and white currants can be trained by a similar method.

We can train raspberries, loganberries and blackberries on horizontal wires, and it is worth remembering that thornless cultivars of these fruits can be obtained.



A CORDON APPLE TREE



TRAINED RASPBERRY CANES

Tools

We are accustomed to hearing reminders of the need to keep our secateurs sharp. A light-weight, ratchet action pair is on the market that will cut branches up to $\frac{3}{4}$ -inch thick. These secateurs can be particularly useful to anyone with weak or arthritic hands, as they will make a cut in three stages without damage to the branch. We need a pruning saw, of course, for any branches more than $\frac{3}{4}$ -inch thick.

Sealing wounds

When a branch of more than three quarters of an inch has been sawn off, the wound must immediately be sealed. The sealing agent in general use is 'Arbrex'. Unfortunately this leaves the hands rather dirty, and for this reason detailed enquiries have been made for an alternative. Regrettably, the search has not been successful. There are alternatives to 'Arbrex', but none is really suitable for use by blind people, as they are either too 'runny', or unobtainable on the retail market or are sold as aerosol sprays.

We are therefore back to 'Arbrex', and the only suggestions we can make are:-

1. That gloves must be worn (the disposable ones are very thin, so they should not hamper touch too greatly) or
2. That some strong cleanser must be used on the hands after the sealing operation.

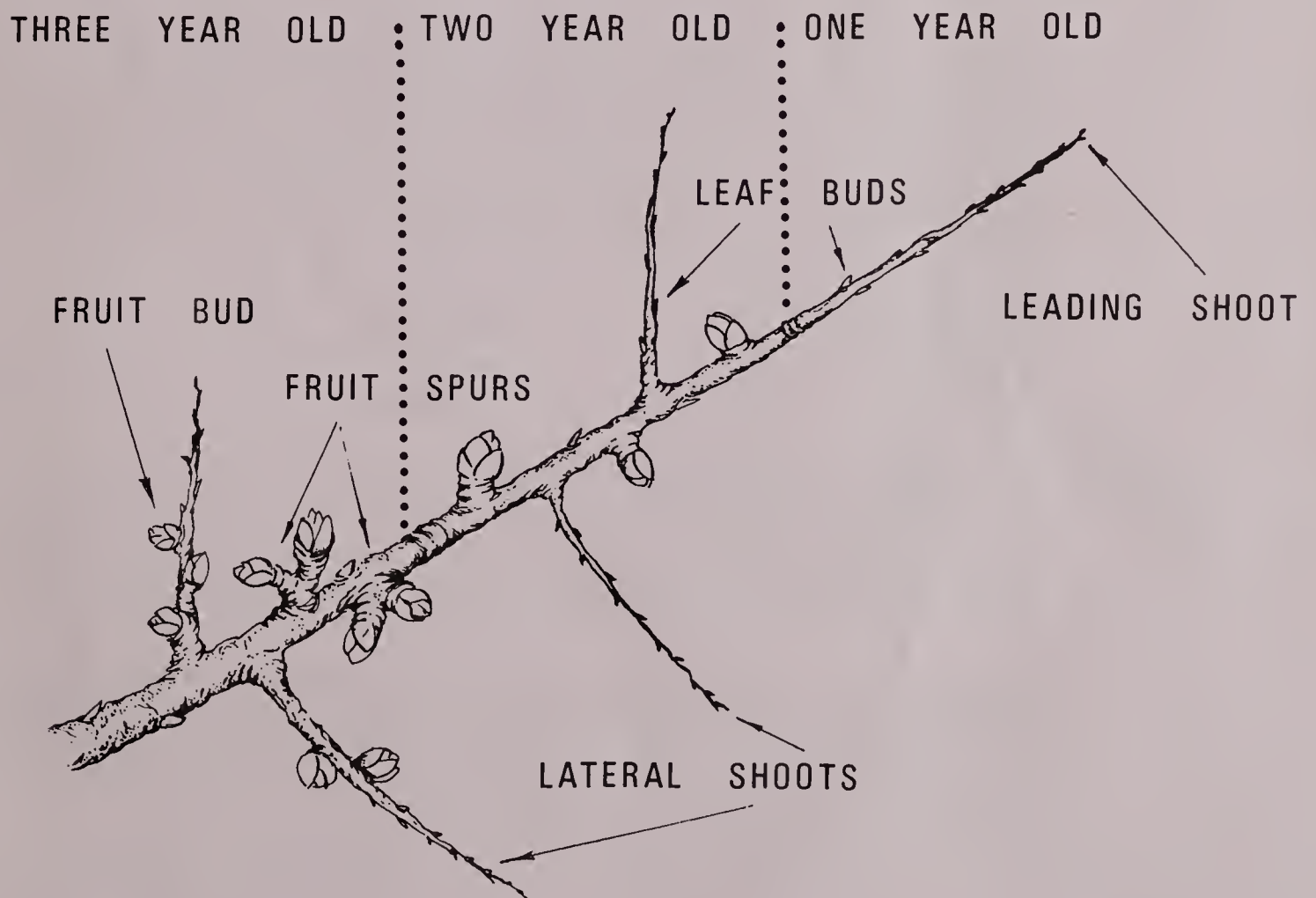
FINAL NOTE

There may be people who would like to learn something about fruit trees, even though pruning them will be out of the question. Others may want to train their sense of touch with something that is of special personal interest. Why not, then, try studying the branch of an apple tree in winter?

It is not difficult to find a leading shoot and some lateral shoots. Feel down a leading shoot until you touch leaf buds, then on to fruit buds and fruit spurs. Leaf and fruit buds are quite different in shape, so they can easily be distinguished one from the other. You may even have some entertainment trying out the possibility of detecting the difference between first, second and third year wood.

Experiments like this must be carried out in the winter, when the buds are tight. As spring approaches and the tree is urging to burst into blossom, there is danger that fruit buds could be knocked off and the crop spoilt.

Little touch tests like this can be extended to other fruit trees during the dormant period, adding interest to the garden scene for the beginner and a boost to confidence for the more experienced gardener who may be coming to terms with a recent loss of vision. The experiment is worth a trial!



Features which can be found on a three year old apple tree.

THE PROBLEM OF SPRAYING

Spraying - and the general control of pests and diseases - is one part of garden work in which a blind person cannot be wholly self-reliant. Sight is not required, of course, for the important work of keeping plants healthy by means of good hygiene, correct nutrition and the right growing conditions. Vigilant hygiene can clear out pests in an embryonic stage and careful cultivation will build up plant resistance to disease, both of which come within the scope of a blind gardener.

The real problem, however, is the detection of an invading pest or disease in its early stages. Touch will discover curled leaves, honeydew, or a sick plant, but by the time such signs are evident the pest or disease has gained a hold. The assistance of a sighted friend who will spot the onset of trouble is badly needed.

The actual spraying, too, can be done more effectively by someone with sight. Aiming a jet at the right spot from a distance is not easy. A blind person can carry out preventive spraying in early spring, as the favourite hiding places for eggs are known. If, however, later in the season a pest is actually present, then it is much more difficult to aim a spray at the target.

SAFE SPRAYS

For the sake of guide dogs we have to consider the safety of the sprays we use. There is also a danger that an insecticide sprayed on a shrub, may, by accident, also fall on flowers in an adjacent bed. If the spray is a chemical the plants in the flower bed could be killed. The safer insecticides - sold under proprietary names - are:-

Derris
Carbaryl
BHC
Pyrethrum

Even these need careful use, according to the stated directions. For example, edible plants sprayed with derris must not be eaten until one day after spraying. Also, if soil has been sprayed, guide dogs should be kept away for a while.

Because the insecticides listed are harmless they are less powerful than others on the market. As a result they will need more frequent use. It must also be remembered that insects can become immune to a particular insecticide, so the type used must be varied from time to time.

Systemic insecticides. The systemic form of preventive spraying will have to be excluded if the gardener wishes to avoid using strong chemicals. If used, the directions and warnings supplied must be strictly observed.

Fungicides. These in general are safer than insecticides, as they are less powerful. Products based on benomyl are effective for all stages of plant disease.

SUGGESTIONS IF SIGHTED HELP IS NOT AVAILABLE

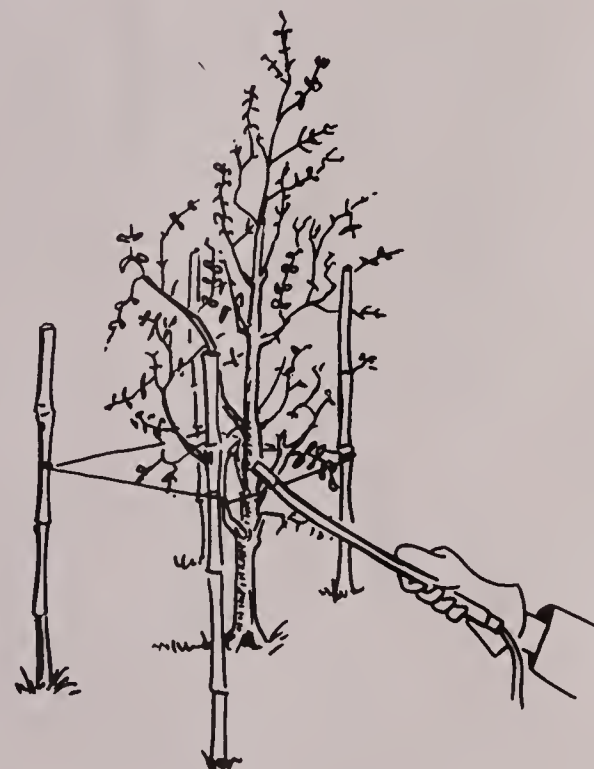
It is hoped that every blind gardener will be able to obtain some sighted help to keep the garden clear of pests and diseases. All the same, there may be times when assistance is not readily available. In such an event, when you have to do outdoor spraying yourself, take precautions. Wear gloves and a mackintosh and cover your eyes. You can have disposable gloves, which are quite thin.

Type of sprayer. A blind person can successfully operate a small hand sprayer in the greenhouse, so may be tempted to invest in a larger size of the same type for garden use. If you have this in mind, think before you buy, as this type of sprayer may have disadvantages for work out of doors. The chief of these is your close range to the target. Your method of operation will be to hold the foliage back with one hand and work the sprayer with the other, the result being that your jet of spray will probably be too near its aim and will overdrench the foliage. The other possibility is that the spray will beat back into your face.

For outdoor work the best type of sprayer is one with a foot-long lance. This is not easy for a blind person to operate, but perhaps some ingenuity and a little practice may come to the rescue.

Here is an idea that might help, particularly if you have only one or two bushes to spray. If it appears far-fetched, possibly it can spark off a better suggestion.

Insert four upright canes in the ground round your bush and run a thick string round them. You can then use both the canes and the string as guides for your lance, and can aim the jet from a correct distance.



Spraying with clear water. One final word for beginners. Before you try any spraying, always experiment first with clear water.

APPENDIX I

FINDING THE MIDDLE OF A PLANT POT

1. A THREE-INCH POT

Any blind person interested in plants can enjoy potting up rooted cuttings, even if unable to work in the garden. Cover a table with a sheet of polythene and you can sit down for this indoor job. The rooted cuttings must be put into 3" pots. How can you find the middle of the pot?

A simple method is to stand the pot on the table and put both hands round it. The tips of the thumbs must touch each other and your fingers will overlap. Now lift both thumbs (tips still touching) and rest them on the rim of the pot. You will find that the tips of your thumbs reach exactly to the middle.

You now have the central position for your little plant. Keep that position with one thumb, while you take the other hand away to pick up the rooted cutting (which should be lying ready beside you). Try this little technique first with a stick instead of a plant - you will find it surprisingly easy.

2. A LARGER POT

When the time comes to move a plant into a larger pot, there is another method of finding the middle of the pot. This technique is used by many sighted gardeners. Put a layer of compost in the bottom of the large pot and stand a smaller pot on the compost, making sure it is in the middle. (The small pot must be the same size as the one in which the plant is at present growing). The rim of the small pot must stand slightly higher than the rim of the larger one. Now fill both pots with compost. Press the compost down lightly in the large pot, but take care not to compact it. You can then lift the small pot out of the middle, where it will leave a neat hole into which you can drop your plant, complete with its ball of soil.



APPENDIX II

LIQUID MEASURING SYRINGES

For a number of years these have been adapted with raised marking and used by many blind gardeners. They can now be bought from the Royal National Institute for the Blind, 224-6-8 Great Portland Street, London W1N 6AA. The largest size (20cc) is a useful aid for measuring liquid fertilizers, insecticides and such products as Jeyes Fluid. Some of these commodities are sold in containers with caps for measurement, which are difficult to fill without spilling. The syringes will measure accurately without any spilling.

LIST OF SCENTED PLANTS

The Royal Horticultural Society issue a list of scented plants. Write to the R.N.I.B. or direct to:- The Public Relations Officer, Royal Horticultural Society's Garden, Wisley, Ripley, Woking, Surrey GU23 6QB.

TWO-WHEELED BARROW

There is a barrow on the market which has two wheels (plus a resting leg) and a pram handle. It is useful for blind gardeners, as it can be pushed with one hand.

LABELS

Labelling by means of Braille is simple, but a question often asked is 'How can gardeners who do not read Braille manage to label their plants, their seed trays, their rows of vegetables, etc?'. Unfortunately there is no answer to this problem up to date. Efforts have been made to find some practical method of labelling other than Braille, but so far without success. Perhaps one day someone will come forward with a 'brain wave'.

CONCLUSION

We have concentrated on basic ideas in our Manual, without reference to the many little devices which people make for themselves from scrap such as empty liquid soap containers. Our aim has been to encourage self-reliance in every possible way, because of its value in promoting achievement, and in reducing the number of occasions when sighted help is needed. As we are obliged to seek assistance with certain gardening operations, it is an advantage to be able to do the maximum amount of work without the need for help. At the same time, let us ensure that any special methods we use are truly reliable (such as keeping contact with a straight base-line), and that our general gardening reaches a high standard, so that the result will be gardens which look attractive and crops that equal those of our sighted friends.

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